Relationships between Protective Factors and Mental Health of Adolescents in Mongar, Bhutan

นิพนธ์ต้นฉบับ

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วารสารไทยเภสัชศาสตร์และวิทยาการสุขภาพ2559;11(2):49-61.

Original Article

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Thai Pharmaceutical and Health Science Journal 2016;11(2):49-61.

บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาความสัมพันธ์ระหว่างปัจจัยปกป้อง (ได้แก่ การสนับสนุนทางสังคม การแก้ปัญหาทางสังคม พลังสุขภาพจิต ความยืดเหนี่ยวทางศาสนา) กับภาวะสุขภาพจิตของวัยรุ่นในประเทศภูฏาน การศึกษา: กลุ่มตัวอย่างคือวัยรุ่นจำนวน 131 คน ที่ศึกษาในเกรด 9 - 12 ของโรงเรียนมัธยมศึกษา เมืองมอนการ์ที่ตั้งอยู่ทางตะวันออกของประเทศภูฏาน เก็บข้อมูลในช่วงเดือนมีนาคม พ.ศ. 2559 โดยใช้การสุ่มแบบหลายขั้นตอน เครื่องมือที่ ใช้ในงานวิจัยประกอบด้วย แบบสอบถามเพื่อรวบรวมข้อมูลเกี่ยวกับ ข้อมูลส่วนบุคคล ภาวะสุขภาพจิต การสนับสนุนทางสังคม การแก้ปัญหาทางสังคม พลังสุขภาพจิตและความยืดเหนี่ยวทางศาสนา วิเคราะห์ข้อมูลโดยใช้ สถิติบรรยายและค่าสัมประสิทธิ์สหสัมพันธ์ของเพียร์สัน ผลการศึกษา: วัยรุ่นที่เป็นกลุ่มตัวอย่างนี้มีค่าเฉลี่ยภาวะสุขภาพจิตเท่ากับ 52.68 (SD = 10.55) จากช่วงคะแนน 0 ถึง 100 โดยค่าคะแนนสูงหมายถึงมีภาวะสุขภาพจิตดี ภาวะสุขภาพจิตมีความสัมพันธ์ทางบวกอย่างมีนัยสำคัญทางสถิติกับการสนับสนุนทางสังคม (r = 0.27, P < 0.001), การแก้ปัญหาทางสังคม (r = 0.25, P < 0.01), และพลังสุขภาพจิต (r = 0.22, P < 0.01). ภาวะสุขภาพจิตมีความสัมพันธ์อย่างไม่มีนัยสำคัญทางสถิติกับความยืดเหนี่ยวทางศาสนา (P > 0.05) สรุป: ผลการวิจัยก่อให้เกิดความเข้าใจที่ดีขึ้นเกี่ยวกับปัจจัยที่มีความสัมพันธ์กับภาวะสุขภาพจิตในประเทศภูฏาน การพัฒนาสุขภาพจิตของวัยรุ่นควรให้ความสำคัญกับการส่งเสริมการสนับสนุนทางสังคม การแก้ปัญหาทางสังคม และพลังสุขภาพจิต

คำสำคัญ: วัยรุ่น, ภาวะสุขภาพจิต, ปัจจัยปกป้อง, การสนับสนุนทางสังคม, การแก้ปัญหาทางสังคม, ความยืดเหนี่ยวทางศาสนา, พลังสุขภาพจิต

Abstract

Objective: To examine the relationships between protective factors (i.e., social support, social problem-solving, resilience, and religiosity) and mental health of middle and late adolescents in Bhutan. Method: A sample of 131 students studying in grade 9 – 12 at Yadi Higher Secondary School, Mongar District in Eastern Bhutan participated in this study. Data collection was performed during the month of March, 2016 using multi-stage random sampling for recruitment. Structured questionnaires for data collection included a demographic questionnaire, mental health inventory, multi-dimensional scale of perceived social support, social problem-solving inventory for adolescents, resilience scale, and centrality of religiosity scale. Descriptive statistics and Pearson's product moment correlation coefficient were used to describe the demographic data and examine the relationships. Results: Mental health of adolescents had a total mean score of 52.68 (**SD** = 10.55) on a range of 0 – 100 with higher scores indicating better mental health. Mental health was positively associated with social support (**r** = 0.27, **P** < 0.001), social problem-solving (**r** = 0.25, **P** < 0.01), and resilience (**r** = 0.22, **P** < 0.01) respectively. No significant correlation between religiosity and mental health was found (**P** > 0.05). Conclusion: The findings of this study shed additional light on the roles of protective factors in adolescents' mental health. In promoting mental health of adolescents, enhancement of social support, social problem-solving, and resilience should be emphasized.

Keywords: adolescents, mental health, protective factor(s), social support, social problem-solving, resilience, religiosity

Introduction

Mental health is an indispensable part of overall health. It is defined as "a state of well-being in which the individual realizes his or her own abilities, cope with the normal stresses of life, work productively and fruitfully, and is able to make a contribution to his or her community".[1] It is the goal of every human being to lead a decent life, attain optimum health, achieve and experience a level of mental well-being that is most gratifying to all. The physical, mental, and social functioning are interdependent and neither physical health nor mental health can exist alone.[1] In addition, the significance of mental health of an individual cannot be overlooked as it is one vital component of health which is enshrined in the definition of health by WHO, and its promotion is vital as mental disorders exact huge burden on individual, community, and the society at large.[2] Although it affects people of all age groups, mental health of adolescents and children are particularly of concern because of high prevalence of mental disorders and the disabilities associated with it.[2] One in five adolescents in the world have mental and behavioral problems and depression remains the single largest contributor to the global burden of disease for the people aged 15 - 19 years.[3,4] Studies on suicide reveal that 68 to 97% of suicide victims

have diagnosable psychiatric disorders which is a major public mental health problem.[5,6] Moreover, about half of lifetime mental disorders begin before the age of 14 years and the world has seen an increasing trend of mental disorders among adolescents in the past 20 - 30 years.[4,7] Mental disorders have a wide range of negative impacts on adolescents, including poor physical health, physical and sexual abuse, neglect, harmful treatment, homelessness, inappropriate incarceration, marginalization, higher rates of disability, and mortality, etc.[7] However, adolescents are receptive of positive influences which provide an opportunity to remedy the problems and lay foundation for good health in adulthood.[3,8]

The world is home to 1.2 billion adolescents[4] whose transition period is often described as storm and stress. Unique biological, cognitive, psychological, and social changes occur during this stage as they are in a key phase of establishing independent identity, making educational and vocational decisions, lifestyle choices, and forming interpersonal relationships. All of these have major long-term influences on individuals in terms of factors that influence mental health well-being.[9,10] Adolescents wanting to try out new behaviors especially during early and middle adolescence is often considered a risk-taking period where individuals experiment with adult behaviors such as smoking, and drug and alcohol use which are carried beyond adolescence through adulthood.[4,11] Adolescence is one of the most crucial periods within human life and how well an adolescent transits through this critical phase of development will determine how their youth and adult periods would look like.[9] However, adolescence also presents an opportunity for the promotion of mental health and prevention of mental disorders from a very early life,[7] which will have positive outcomes, such as better school performance, good physical and mental health, refraining from substance use, proper conduct, and better adjustment within the family, community, and society. Thus, positive mental health of adolescents is considered as a resource for adolescents.[10] Since mental health disorders are highly prevalent in lower and middle income countries, early detection of the problems and factors that promote mental health of adolescents in such countries must be prioritized and emphasized. The early detection, treatment of mental health disorders, and promotion of mental health in adolescents not only result in better performance and positive outcomes but also reduce a huge burden on the health care system.[4]

The mental health of Bhutanese adolescents in particular is little known and some data available show that they are at risk of poor mental health. The records with the Ministry of Health show an increasing trend in mental disorders in Bhutan.[12] The substance abuse by youth from the year 2000 to 2014 has increased 10 times and are thought to be responsible for mental disorders in youths.[13,14] Alcohol remains the most abused substance in Bhutan and students with a mean age of 16 years are found to be the majority among people who engage in harmful substance use.[15,16] Bhutan have seen 361 completed suicides from 2009 - 2013 of which 14% were students.[17] It is evident that Bhutanese adolescents are somehow under pressure to meet the demands and expectations of parents and society which will have negative impact on their health and well-being. Moreover, there is a shortage of mental health professionals and mental health facilities. The WHO–AIMS reported that none of the 63 inpatient/outpatient mental health facilities available in Bhutan were reserved in particular for children and adolescents.[18] Against this backdrop, identification of strengths and protective factors to promote, protect and enhance the mental health of Bhutanese adolescents is very important. The early identification of protective factors to promote mental health and well-being will help the adolescents to deal with the stresses and conflicts of their daily lives and smooth transition to the next phase of their lives. It will also aid in the early detection of mental disorders which have debilitating effects on their present and future lives besides equipping them with better strategies to deal with them. That will ultimately result in better school performance, refraining from drugs and alcohol use, and having good physical and mental health.

This present study was guided by Moos and Schaefer's Integrated Stress and Coping Model[19] and the literature review related to protective factors of mental health. The model conceptualizes that personal and environmental protective and risk factors interact with one another and with life crises and developmental transitions. The interaction will determine the coping strategies the individuals utilize in which positive appraisal and good coping strategy adopted will result in personal health and well-being, whereas negative appraisal and a lack of proper coping strategies will result in negative health outcomes. Although the model conceptualizes both risk and protective factors, the present research focused on the protective factors. It is therefore important to emphasize on

promoting positive mental health through strength-based approaches, and give importance to strengths, abilities, and resources over deficits and problems.[10] In terms of risk factors, previous researches have focused on mental health problems rather than the strengths and positive outcomes,[10] which underscores the importance of focusing on the positive strengths of a person to increase the efficacy of intervention programs, rather than risk factors which basically are the weakness of a person. Thus, a research that focuses on protective factors will contribute towards maintaining or rebuilding mental health well-being, despite the presence of risk. The protective factor refers to influences or factors that determine an individual's appropriate response, so that there is a decrease in the impact of risk factors, in negative outcomes, and in the risk of engaging in negative behavior. These declines all result in a favorable outcome.[20,21] As adolescents are in a transition period, availability of personal and environmental protective factors act as a coping resource to deal with the stressors and therefore, have better physical health and mental well-being. These factors include self-esteem, optimism, positive temperament, behavioral control, intelligence, religious faith, resilience, problem-solving, coping skills, good parent-child relationship, family cohesion, social network and social relationships, social support, and good school environment. The opposite is true when adolescents lack resiliency, problem-solving skills, and support that may affect their physical health and mental well-being. The protective factors examined in this present study were religiosity, resilience, social problem solving, and social support.

Religion exists as an integrated and organized set of beliefs, behaviors, and norms related to God or sacred transcendence and focuses on important values and goals.[22] It has "played an important role as one of the most powerful forces in life, death, and disease in the human history".[23] Since religiosity can be defined and understood in many ways,[22] the current study focused on the religious salience/importance of religious meanings to one's personality and behavior.[24] It is the measure of an intensity of five core dimensions of religiosity: 1) intellectual dimension which reflects the intensity of one's interest in religious matter; 2) ideology refers to religious beliefs in the probability of existence of God and religious doctrines, 3) religious experience which is strength of spiritual contact with God, 4) public practice refers to worship or frequency of attendance to religious services, and 5) private practice which is frequency of prayer and meditation in one's life.[22,24] Empirical findings indicate that religiosity serves as a protective factor and is positively correlated with mental health.[22,25] Abdel-Khalek[23] studied the relationship among religiosity, subjective well-being, and depression among 7211 Saudi adolescents aged 11 to 18 years. The author concluded that those adolescents who had higher level of religiosity were found to be happier, had satisfaction in life, enjoyed good physical and mental health, and were less depressed. In addition, literature review by Wong, Rew, and Slaikeu[25] found 90% of the 20 studies reviewed indicated that higher religiosity or spirituality was associated with better mental health in adolescents. On the contrary, Hackney and Sanders[26] noted that studies on religiosity and mental health have yielded both positive and negative relationship as well as no relationship. The authors contend that such ambiguous results are a result of multi-faceted nature of religion. There are others who argue that religiosity is in fact harmful, causes excessive anxiety or makes no difference on mental health and some studies that did not find any association.[27,28,29] Thus, it is important to examine whether religiosity was related to mental health of Bhutanese adolescents as they engage in religious prayers and worships, and functions from a very young age.

Resilience is another protective factor explored in this study. It refers to an individual's ability or capacity to bounce back and cope with adversity to avoid diverse health problems or to avoid breakdown when confronted with life stressors.[1,30] They constitute a set of qualities like individual traits, states, characteristics, conditions, and virtues that help them recover from adversity.[31] Adolescents are subjected to multiple risk factors in life, but not all of them experience the negative outcomes. For those who do, they do not experience the same level of outcome because of the resilience. It is one of the reasons why some individuals can maintain positive mental health despite great adversity and adverse life circumstances. Hjemdal and colleagues[32] studied the relationship between resilience and levels of anxiety, depression, and obsessive-compulsive symptoms in 307 Norwegian adolescents aged 14 - 18 years. The authors found that adolescents with higher resilience reported lower scores on levels of anxiety, depression, and obsessive-compulsive symptoms. Similarly, study by Skrove, Romundstad, and Indredavik[33] concluded that the presence of resilience factors such as social competence and family cohesion were associated with lower

odds of experiencing anxiety and depression symptoms in adolescents. Since resilience can be taught and learned, teaching and equipping adolescents with coping mechanisms and strategies to deal with stresses will enhance their resiliency characteristics to become more successful, and can have better physical and mental health.

The social problem solving is a self-directed cognitive-affective-behavioral process used by an individual to generate various solutions or responses to stressors and problems in daily life.[32] Social problem solving in this study assessed the two process namely 1) automatic or informal process, and 2) evaluation or formal process, based on the SPS model of Frauenknecht and Black.[32] An individual applies knowledge, information, and strategies that were effective previously to solve the problems during the automatic process. However, when the automatic process is no longer effective in solving the problems or when encountered with different problems, an individual uses formal evaluation process. It comprises two distinct components of problem orientation, and problem-solving skills. The problem orientation is the motivational component that reflects the problem solver's belief and capability to solve the problems. The evaluation process of social problem solving involves problem identification to selection, consequence prediction, progress to evaluation, etc. Social problem solving is shown to be negatively correlated with mental health of adolescents.[34,35] Bayani, Ranjbar, and Bayani[34] studied the relationship between social problem solving and depression and social phobia among 403 students and found higher problem solving abilities was associated with less depression and anxiety. Similarly, a significant relationship was found between social problem solving and moral disengagement in a study involving African American adolescents.[35] Frauenknecht and Black[32] believe that programs aiming to remedy social problem solving deficiencies in young people will provide skills to minimize health-compromising behaviors due to stressful circumstances and poor decision making. Thus, one way to minimize such problem is to increase their problem solving skills through teaching as it had been found to be effective.[36]

Social support is an important function of social relationships and is strongly related to health and illness outcomes.[20,22] Social support also acts as protective factors against the onset or recurrence of mental ill-health, and enhances recovery from mental disorders.[20,22] As adolescents navigate through a transitional period with many changes and challenges, the support from their families, friends, teachers, community, and society serves as an important resource. It can have both direct influence as well as buffering effects on adolescent's mental health.[37] Social support referred to perception or belief that they are cared for, loved, and esteemed, having assistance available from other people, and being a part of a supportive social network.[22,38] Social support has been positively linked with adolescents' mental health. For instance, in a study in Romania, adolescents with higher support were found to have a higher level of positive mental health.[39] The role of social support as a protective factor in lifetime suicide attempt and negative correlations with depression, anxiety, stress, and obsessive-compulsive symptoms are also reported.[38,40] The protection and promotion of mental health of adolescents begins with parents, families, schools, and communities. Thus, emphasis on general social support will help prevent risky and violent behaviors in adolescents. Moreover, adolescents who perceive support from family, peers, and school are more likely to engage in positive mental health behaviors and have better health outcomes.[41] Since, social support is a modifiable factor, measures aiming at strengthening adolescent's social support will have positive impact on their mental health outcomes.

The protection and promotion of mental health of adolescents is vital as it has tremendous positive impact not only during the adolescence period, but throughout the course of their adult life. The empirical evidence suggests that possession of protective factors are associated with positive mental health outcomes, while lack of these factors have been found to relate with mental health problems that exact huge toll. Mental health issues are a significant concern among adolescent age group. Its importance must be recognized by parents, teachers, health practitioners, and policy makers because adolescents with better mental health are physically healthier, demonstrate positive social behaviors, and engage in fewer risky behaviors. Thus, this study aimed to examine the relationship between mental health and religiosity, resilience, social problem solving, and social support among adolescents in Mongar, Bhutan.

Materials and Methods

Design and setting

A cross-sectional correlational design was employed for this study. The study was conducted at Yadi Higher

Secondary School, in Mongar District in the East of Bhutan. Of the three public higher secondary schools in Mongar, Yadi HSS was selected through a simple random sampling. The school is located in a semi-rural area and has students studying from pre-primary to grade 12. The study was conducted during the final 2 weeks of March, 2016.

Population

The target population of the study was middle and late adolescents, age range from 14 – 19 years old which correspond with school grades of 9 – 12. Those who studied in grade 9 – 12 in 3 high schools located in Mongar District were included. There were 1,691 students studying in grades 9 – 12 in 3 schools during the academic year 2016.

Sample

The study sample consisted of 131 students from grades 9 – 12. There were 468 students studying in these grades at Yadi HSS during the academic year 2016. The inclusion criteria for these participants were: 1) Bhutanese nationality, 2) being able to read and write English, and 3) being a healthy individual with no medical or psychiatric diagnoses that could impair their ability to answer research questions.

Sample size

Power analysis was used to calculate a priori sample size which requires computing power, effect size, and alpha level.[42] An effect size is the degree to which a relationship exists in a study. Based on a power of 0.80, an effect size of 0.25 and an alpha level of 0.05, a minimal sample size of 120 participants was required. Through a simple random sampling, 1 section from each grade was selected and all students from the selected sections were included for the study to avoid selection bias. Of the 139 students sampled, 131 participated in the study.

Research Instruments

Data were collected using 6 questionnaires.

Demographic Questionnaire

This questionnaire was developed by the researcher and had 10 items that captured data on participants' age, gender, school grade, place of residence, student's academic mark in the preceding academic year, parent's occupation, parents' monthly income, parent relationship status, and number of siblings in the family.

Mental Health Inventory (MHI-18)

MHI-18 was used to assess the mental health of the participants during the past 4 weeks. It was developed by Veit and Ware[43] and comprised of 4 subscales: anxiety (4, 6, 10, 11, 18), depression (2, 9, 12, 14), behavioral control (5, 8, 16, 17), and positive affect (1, 3, 7, 13, 15). It is scored on a 6-point Likert-type response with item score ranging from 1 (all of time) to 6 (none of the time). Due to their opposite meaning, scores of the 8 items (1, 3, 5, 7, 8, 10, 13, 15) are reversed. Thus, mean MHI raw score ranges from 1 – 6. The MHI total score is computed as follows: MHI Total Score = [(Mean MHI – 1)*100/5]. The same method is used to compute total scores for all 4 subscales. Thus, the subscale scores and total score range from 0 – 100 with higher scores indicating better mental health. MHI-18 had a high internal consistency reliability level with a Cronbach's alpha coefficient of 0.93. In this study, the instrument yielded an acceptable internal consistency reliability with a Cronbach's alpha coefficient of 0.70.

The Centrality of Religiosity Scale (CRS-15)

Religiosity was assessed by the Centrality of Religiosity Scale.[24] It is a 15-item self-report questionnaire about the importance/salience of religious meanings in personality and behavior. It measures the five constructs of religiosity (ideology, intellect, public practice, private practice, and religious experience). It is scored on a 5-point Likert-type scale with item score ranging from 1 (never/not at all) to 5 (very often/very much so). The CRS total score and subscale score are obtained by summing the scores and dividing it by number of items. Thus, a range of 1.0 to 5.0 is obtained. Participants with CRS total scores between 4.0 to 5.0 are categorized as "highly religious," 2.1 to 3.9 as "religious," and 1.0 to 2.0 as "nonreligious." For this study, a high reliability with a Cronbach's alpha coefficient of 0.81 was obtained.

Resilience Scale (RS-14)

Resilience scale developed by Wagnild[44] was used to assess adolescent's resilience. It contains 14 items rated on a Likert-type scale ranging from 1 (strongly disagree) to 7 strongly agree. The total scores range from 14 – 98 with higher scores indicating higher resilience. The scale has a

high internal consistency reliability with a Cronbach's alpha coefficient of 0.93. In this study, we also found a high reliability of this scale with a Cronbach's alpha coefficient of 0.80.

Social Problem-Solving Inventory for Adolescents (SPSI-A)

Social problem solving was assessed by the Social Problem-Solving Inventory for Adolescents, a 30–items questionnaire, developed by Frauenknecht and Black.[32] It has 3 main subscales: 1) Automatic Process subscale (1 – 3), 2) Problem Orientation subscale (4 – 12), and 3) Problem-Solving Skills subscale (13 – 30). It is rated on a Likert-type scale ranging from 0 (not at all true of me) to 4 (extremely true of me). The scores of the responses for negatively worded items (4, 5, 7, 8, 9, 10, 11, and 12) were reversed. The numerical responses to each of all items were summed up and then divided by the total number of items for either the total inventory scale or subscales. The scores in 1st quartile indicate ineffective problem solver, 2nd to 3rd quartile as average problem solver, and 4th quartile as effective problem solver. SPSI-A scale has a high reliability with a Cronbach's alpha coefficient of 0.93. Our study also found a high reliability with a Cronbach's alpha coefficient of 0.89.

Multidimensional Scale of Perceived Social Support (MSPSS)

The perceived social support was assessed by MSPSS developed by Zimet, Dahlem, Zimet, and Farley.[37] The scale assess the adequacy of perceived social support from three dimensions: 1) family (3, 4, 8, and 11), 2), friends (6, 7, 9, and 12), and 3) significant others (1, 2, 5, and 10). It has 12 items which are scored on a 7-point Likert-type response format ranging from 1 (very strongly disagree) to 7 (very strongly agree). The scoring is done by summing the scores of the four items of each subscale for family, friends, and significant others, and taking the mean of each subscale. The mean scale score of 1 – 2.9 is considered as low support, 3 – 5 as moderate support, and 5.1 – 7 as high support. By summing up scores of all items, the total score range from 12 – 84 with a total score of 12 – 48 considered as low support, 49 – 68 as moderate support, and 69 – 84 as high support. With an original Cronbach's alpha coefficient of 0.85, the scale has a high reliability level. In our study, a high reliability level was also found (Cronbach's alpha coefficient of 0.87).

Data collection procedure

The research was approved by the Institutional Review Board [IRB] for Graduates Studies (approval no. 04–01–2559), Faculty of Nursing, Burapha University, Thailand. Further, it was reviewed and approved by the Research Ethics Board of Health (REBH), Ministry of Health of Bhutan. The permission to access Yadi Higher Secondary School in Mongar district was obtained from the Ministry of Education of Bhutan. Finally, permission from the school principal was obtained.

The participants were recruited solely on a voluntary basis, willing to participate, and those who had met the sample inclusion criteria. Students and parent/guardian information sheet were provided and both parent/guardian's consent and student's assent were obtained. Permission to exempt parental consent from students staying in a hostel was sought from REBH and class teacher's consent was obtained for the purpose. Data were collected in a suitable room identified after the classes. It took them 30 – 40 minutes to complete the questionnaires.

Data analyses

Data were coded and entered into a statistical software for analysis. The statistical significance with an alpha level of 0.05 was set. Data were tested for normality and assumptions applicable for Pearson's product moment correlation coefficient. Descriptive statistics were used to describe the demographic information data. Pearson's product moment correlation coefficient was used to determine the association between adolescent's mental health with religiosity, resilience, social problem solving, and social support.

Results

Demographic characteristics of participants

A total of 131 students studying in grades 9 – 12 at Yadi HSS who met the inclusion criteria were recruited for the study. Table 1 shows the demographic characteristics of the participants. The participants had a mean age of 17.16 years (**SD** = 1.56). There were more females (60.30%) than males (39.70%). Majority of the participants stayed in a hostel (88.50%) and with parents and relatives (11.50%). The percentage of academic marks obtained by students in the preceding academic year was within a range of 61 – 75 of 100 (73.80%). In terms of the parent's occupation, 66.40%

and 71.80% of the fathers and mothers respectively were farmers with a monthly income below Nu. 10,000 (1 USD ≈ Nu. 66). The participants reported their parents as living together (74.80%), divorced (16.80%) and died or fatherless (8.40%).

Table 1 Demographic characteristics of the participants (**N** = 131)

Characteristics	N	%
Gender		
Male	52	39.70
Female	79	60.30
Age (years) (n=129)		
14 – 16	41	31.78
17 – 19	82	63.57
20 - 22	6	4.65
Mean = 17.16 Years, SD = 1.56		
School grade		
Grade 9	26	19.85
Grade 10	31	23.66
Grade 11	38	29.01
Grade 12	36	27.48
Present residence		
In hostel	116	88.50
With parents/relatives	15	11.50
Student's academic marks (n = 130)		
46 – 60	27	20.77
61 – 75	96	73.85
≥ 76	7	5.38
Mean = 64.82; SD = 6.07; Range = 48 – 83		
Father's occupation		
Farmer	87	66.41
Government servant	17	12.98
Private employee	7	5.34
Business	5	3.82
Retired civil servant	3	2.29
Others	12	9.16
Mother's occupation		
Farmer	94	71.76
Housewife	27	20.61
Business	9	6.87
Others	1	0.76
Parent's monthly income		
< Nu.10,000	87	66.41
Nu.10,000 – 20,000	31	23.66
Nu.21,000 – 30,000	8	6.11
> Nu. 30,000	5	3.82
Parent's relationship status		
Living together	98	74.81
Divorced	22	16.79
Others	11	8.40
Number of siblings in the family (n = 130)		
single child	4	3.08
2 children	21	16.15
≥ 3 children	105	80.77

Description of mental health status of the participants

The mean of the mental health total score in this study sample was 52.68 (**SD** = 10.55). The mean for subscale total scores of anxiety, depression, behavior control, and positive affect were 46.14 (**SD** = 15.84), 54.66 (**SD** = 16.78), 56.60 (**SD** = 15.32), and 53.82 (**SD** = 16.90) respectively (Table 2).

Table 2 Description of mental health among the participants (**N** = 131).

Variables	Possible score range	Actual score range	M	SD
Mental Health (Total)	0 – 100	22.22 – 82.22	52.68	10.55
Subscales				
Positive mental health				
- Positive affect	0 – 100	10.00 – 95.00	53.82	16.90
Negative mental health				
-Anxiety	0 – 100	4.00 – 84.00	46.14	15.84
-Depression	0 – 100	10.00 – 85.00	54.66	16.78
-Behavioral control	0 – 100	10.00 – 90.00	56.60	15.32

Description of protective factors

Religiosity had a total mean score of 62.92 (**SD** = 6.87) indicating that all participants were highly religious (Table 3). Students were also highly religious in all subscale including religious ideology, intellect, public practice and private practice, except for religious experience which was at a moderate level. Participants had a high level of resilience with total mean score of 70.66 (**SD** = 11.79). The results of the social problem-solving showed participants were an average problem solver with a mean overall score of 64.36 (**SD** = 17.51) and an average problem solver in all subscale categories. The total mean score of perceived social support was 65.21 (**SD** = 11.84) indicating a moderate level of perceived social support. At subscale levels, participants perceived high level of support from family and significant others while perceived support from friends was at a moderate level (Table 3).

Relationship between protective factors and mental health

Relationships between mental health and religiosity, resilience, social problem-solving, and social support were examined using Pearson's product moment correlation coefficient (Table 4). The results showed significant correlations of mental health with resilience, social problem-solving, and social support (**r** = 0.22, **P** < 0.01; **r** = 0.25, **P** < 0.01; **r** = 0.27, **P** < 0.01, respectively). The relationship

between religiosity and mental health was however not significant (**r** = 0.03, **P** > 0.05).

Table 3 Description of religiosity, social problem-solving, and social support (N = 131).

Variables	Mean	SD	Actual score	Possible score	Level
Religiosity (overall)	62.92	6.87	34 – 75	15 – 75	High
Subscales					
- Ideology	12.73	1.91	7 – 15	3 – 15	High
- Intellect	11.91	2.02	5 – 15	3 – 15	High
- Public practice	13.80	1.72	6 – 15	3 – 15	High
- Private practice	13.30	1.50	9 – 15	3 – 15	High
- Experience	11.15	2.18	4 – 15	3 – 15	Moderate
Resilience	70.66	11.79	26 – 94	14 – 98	High
Social problem-solving (overall)	64.36	17.51	15 – 105	0 – 120	Average
Subscales					
- Automatic process	6.87	2.68	0 – 12	0 – 12	Average
- Problem orientation	17.09	5.66	4 – 32	0 – 36	Average
- Problem solving-skills	40.40	14.08	3 – 70	0 – 72	Average
Perceived social support (overall)	65.21	11.84	27 – 84	12 – 84	Moderate
Subscales					
- Support from family	23.02	4.32	7 – 28	4 – 28	High
- Support from friend(s)	20.18	4.74	4 – 28	4 – 28	Moderate
- Support from significant other(s)	22.02	4.95	8 – 28	4 – 28	High

Table 4 Correlation coefficients between protective factors and mental health (**N** = 131).

Variables	Correlation coefficient (**r**)	P–value
Religiosity	0.03	0.722
Resilience	0.22	**0.011**
Social problem-solving	0.25	0.005
Social support	0.27	0.002

Discussions and Conclusion

Findings from the study showed that the mean of adolescents' total mental health score was 52.68 (**SD** = 10.55) on a score range of 0 – 100. Based on the score, it indicated that adolescents' mental health was at a moderate level. The mean total scores on positive mental health (positive affect) and negative mental health (anxiety, depression & behavioral control) were also at a moderate level. It meant that students experienced positive mental health as well as certain levels of anxiety, depression, and loss of behavioral control. This is consistent with the claims that having good mental health does not mean an absence of psychological distress and the absence of psychological distress does not result in mental well-being.[20,45] The findings can be interpreted as follows. Adolescents are in a transition period accompanied by physical, mental, and socio-emotional changes. However, they were able to experience a certain level of mental well-being despite many life stressors and challenges. The possible reasons for the key ingredients of good mental health are the availability of good social atmosphere in school, a good network of friends, proper communication, feeling of togetherness, support and equity, individual resilient characters, and problem-solving skills.[46] For adolescents, the school environment plays a critical role in their development.[47] Thus, good school atmosphere will provide positive environment for adolescents' growth, development and well-being. In our study, most of the participants stayed in a hostel (88.50%) where they were provided with free meals, hostel rooms, stationary, and many other facilities including free educational cost. When adolescents have all the resources available, they feel satisfied with their present need which in turn will provide them with mental satisfaction. Moreover, constant guidance and supervision from parents, teachers and elders may provide them a sense of support and security that foster psychological well-being. The availability of supportive school environment motivates students in active school participation, better academic results, feeling of safety and positivity that influence the mental health of adolescents.[47] It also implies that adolescents have the strengths and resources, and abilities to identify, confront and solve problems by utilizing their full potential that results in a sense of mastery over the situation and feeling of satisfaction, joy and contentment.[1]

However, experience of good mental health does not mean adolescents are free of psychological distress. The students experienced anxiety, depression, and loss of behavioral control despite experiencing positive mental health, which is consistent with the findings of other studies that reported common presence of anxiety and depressive symptoms in adolescence.[33,39] Likewise, adolescents with low control over behavior are linked with poor mental health.[29] Adolescents at this age group face the challenges of establishing self-identity, independence, peer relationships, meeting societal demands, personal expectations, and taking critical life decisions that affect their physiological and emotional health. Thus, it is not only essential to promote mental health but also to detect possible mental problems that adolescents encounter.

The main objective of this present study was to examine if protective factors were related to adolescent's mental health. As hypothesized, mental health was significantly and positively correlated with social support, social problem solving, and resilience; however, religiosity was not. The details are discussed as follows. For social support, the present study assessed adolescents' perceived social support from family, friends, and significant others (people intimate to adolescents who could be their teacher, lover, or relatives). Overall, participants perceived a moderate level of support (**M** = 65.21, **SD =** 11.84). In the subscale category, they perceived a high support from family and significant others, while perceived support from friends was at a moderate level. For most adolescents, entering into a world of unknown and trying to establish self-identity, are faced with many life challenges. This can be a terrifying experience and may affect their mental well-being. Whether they resolve the problems healthily in part will depend on the support system available to them. The possible reasons for high perceived support from family and significant people might be due to the fact that parents remain the primary source of support for young people and adolescents are more likely to express their problems and seek help from people whom they consider as intimate/close than the general friends in school.[48]

The perceived social support was positively correlated with mental health indicating those who perceived more support had better mental health. The correlation though was low but significant (**r** = 0.27, **P** < 0.001). The possible mechanism is that support from their family, friends and intimate people serves as a vital resource that strengthens their abilities to cope with stressors.[22,49] This in turn will provide them with a sense of personal satisfaction and mental well-being. Bhutanese adolescents receive support not only from family members but also from relatives and community people during their study period that would have provided them a feeling of security, satisfaction, and strength to cope with stressors. The other reason is that when adolescents have a good support system, they disengage from problematic behaviors that are strongly linked with negative mental health. Many studies have found negative correlation between social support and mental health problems.[22,39,40] For instance, Vincze et al reported higher incidences of anxiety and depression in Romanian adolescents who had low social support while high social support have been linked with decreased risk for suicide.[38,39]However, only subjective/perceived social support was examined in present study. It would be better to measure the actual social support that these adolescents received as well. For adolescents, it is the actual support received rather than perceived support that has strong association with mental health in terms of a lower level of social dysfunction and depression.[22] When adolescents receive support, it eases their psychological tensions and thus enhances their well-being.[22] Since social support is a modifiable factor, modification and enhancement of support from family, friends, teachers, and society will disengage adolescents from problematic behaviors and improve their mental well-being.

For social problem-solving, adolescents' problem solving abilities were at an average level and were positively correlated with mental health (**r** = 0.25, **P** < 0.01). The average problem solving abilities could be due to the fact that the social problem solving abilities develop over time through life experiences and also it involves cognitive skills which are not fully developed in adolescents.[28] Moreover, Bhutanese culture entails high respect and maintains space between teacher and student. It would hinder adolescents from freely expressing and actively engaging in problem-solving activities with teachers which could also be a reason for average problem-solving abilities of adolescent samples in this study. Adolescents are confronted with multiple challenges during the transition period. The decision they take will have both short- and long-term consequences on their health behaviors. Thus, adolescents with high social problem-solving skills will help them in controlling and modifying behaviors that has direct impact on their quality of lives and reduce morbidity and mortality.[32] However, adolescent's cognitive skills are not fully developed to solve the problems more successfully like in adults, and they experience negative feelings when they are not able to solve such problems.[32,50] This explains the linkage between problem-solving skills deficit and increased incidences of anxiety, depression, delinquent behaviors, and other symptoms in adolescents.[34,35] Moreover, adolescents with negative problem orientation and avoidant style are linked with a higher rate of anxiety, depression, and behavioral problems.[34,35] This is because those who avoid facing the problems are more likely to engage in maladaptive behaviors which in turn are associated with mental problems. For instance, adolescents with negative problem orientation was found to be related to marijuana use while problem-solving avoidant to be related to alcohol use,[50] both of which are detrimental to their mental well-being.

Since problem-solving skills can be taught, adolescents' mental health could be improved through teaching social problem-solving skills in school programs.[36,50] Furthermore, social problem-solving skills can be enhanced by encouraging close interactions between students and family, teachers and friends. For this to happen, school must facilitate parent-student interaction frequently. It has been found that adolescents are more likely to discuss and solve problems with their family members than others.[39] Thus, a good family and peer relationship allows adolescents to express and discuss their problems, which give them a sense of mastery and feeling that they possess the skills necessary to deal with social situations, that in turn enhance their mental well-being. These may also explain the positive relationship between social problem solving and mental health in this study.

For resilience, adolescents had high resilience (**M** =70.66, **SD** =11.79) and it was positively correlated with their mental health (**r** = 0.22, **P** < 0.01). The presence of high resilience in adolescents imply that they are able to cope with life stressors and overcome the difficulties through their resilient character that give them strength to bounce back from difficult situations. One of the reasons for high resilience in adolescents could be attributable to their personal resources, availability of support from within and outside of the family and conducive school environment. This was more so because participants were from lower income groups who endured and overcame numerous hardships in their childhood period. This prior exposure might have led them to develop high resilience. The adolescents' intelligence, sociability, communication and personality traits, encouragement, assistance, care and cohesion with family, and safe school environment all enhance resilience that buffer against life adversity and are negatively associated with anxiety and depressive symptoms.[33,40,48]

The positive correlation between resilience and mental health in this study is consistent with the study of Hjemdal et al.[40] The authors found weak to moderate correlation between resilience and negative mental health (anxiety & depression). Our finding is also consistent with meta-analysis on concepts of resilience that one of the outcomes of resiliency is that it helps improve mental health in adolescents.[48] A good relationship with parents, having a high number of friends, parental monitoring and school involvement all contribute to development of self-regularity strategies and self-esteem that enhance their resilience that protect and promote mental health through effective coping mechanisms.[30,33] This happens because high resiliency provides adolescents a sense of having overcome one situation that active mastery of other situations is possible to deal with.[33] When adolescents have proper coping mechanisms, they improve their mental health and psychological well-being by means of reduced involvement in harmful health behaviors.[22] For instance, adolescents who have high resilience are found to have a lower rate of anxiety and depression that are detrimental to their mental health.[40] Adolescents possessing attributes of resilience such as sense of self, determination, pro-social attitude, and a quality of rebounding mechanism are more likely to acknowledge that difficulties in life are to be dealt with and are resolute in their perseverance to complete the task or face the challenges.[30] This will power and determination of "I can do it" allow them to experience health and well-being in the face of adversity. As adolescents are open to positive influences, teaching them about resiliency factors can improve their physical health and mental well-being.

The last concept was religiosity. Overall, 72.50% of our study participants felt highly religious and 27.50% felt they were religious (**M** = 62.92, **SD** = 6.87). The adolescents' high religiosity is consistent with the findings of Abdel-Khalek[23] who reported high religiosity in Saudi children and adolescents. Interestingly, religiosity in our study was not related to their mental health. Though the relationship was positive (**r** = 0.03, **P** > 0.05), it was not significant. This is opposed to the claims by other studies that have found positive relationships between religiosity and mental health.[23,25] Nonetheless, the finding of the present study is consistent with some other studies that have reported no relationship between religiosity and mental health.[27,51,52] Lewis[51] examined the association between frequency of church attendance (religiosity) and happiness (mental health) in 154 Irish undergraduate students and found no significant relationship (**r** = 0.03, **P** > 0.05). Likewise, no relationship between religiosity and negative mental health were found in other studies[52] In a TRAILS study, pre-adolescents' religiosity and mental health were examined in terms of internalizing and externalizing behavioral problems among 543 samples in The Netherlands but no association was found.[52] The authors contend that the lack of association could be because pre-adolescents are still dependent on their parents for religiosity and they are still questioning and internalizing these beliefs. Another reason is that internalizing the religious beliefs is followed by a constructive phase of doubt that may temporarily increase anxiety and conflict.[52] It

is possible that this phase continues in middle and late adolescence periods which could have neutralized the positive effect of religiosity on mental health in the present study.

A meta-analysis of studies on religiosity and mental health by Hackney and Sanders[26] have yielded both positive and negative relationships as well as no relationship. The authors contended that such ambiguous results are a result of multi-faceted nature of religion. Furthermore, the authors argued that studies on religiosity and mental health are correlational in nature and do not explain causality. Thus, presence of good mental health could have predisposed adolescents to consider themselves as highly religious; rather than that high religiosity leads to positive effect on mental health. It is also possible that other factors such as social support mediates the role of religiosity on adolescents' mental health. Pearce, Little, and Perez[53] contended that it is the social experience (support) in a religious environment that is related to their mental health and not the attendance to religious services itself. The authors reported that adolescents who felt the religious gatherings as more demanding were more likely to experience depressive symptoms. For instance, religious public practice involves attending religious functions in the community where members provide social support and psychosocial resources that influence the mental health. It means that adolescents do not experience well-being by merely engaging in religious activities. The fact that religious values are assimilated over time through experience and maturity as they grow may be another reason for lack of relationship between religiosity and mental health. The religious measures such as religious experience are existential and involve cognitive skills that develop over time and may not be understandable for adolescents.[54] It is also possible that they engage in religious acts, prayers, and worship as they are influenced by peers and parents. They try to consider as highly religious to gain peer, parent, and societal approval.[54] If adolescents consider that attending a religious gathering, praying and worshipping as norms in the school and society, it may not benefit them on their well-being. On the other hand, certain religious beliefs in adolescents can also cause excessive guilt, condemnation, cause or increase anxiety and may adversely affect mental health.[28]

In terms of implications, the findings of this study provided better understanding on Bhutanese adolescents' mental health state and the relationship between protective factors and their mental health. Mental health nurses, counselors and other healthcare providers in Bhutan need to consider enhancing protective factors like resilience, social problem-solving skills, and social support while providing mental health services to adolescents. The healthcare providers during their encounter with adolescents need to assess the availability of personal resources as well as risk factors. Besides intervening at their own level, they can coordinate with health policy makers to incorporate these factors in mental health promotion programs which will have a significant impact to adolescents across the country. The results of the study also shed light on raising awareness among those working with adolescents to address not only academic but also mental health problems which are commonly experienced in adolescence. Thus, collaboration with education policy makers to incorporate programs and activities that enhance protective factors will provide opportunity for teachers and counselors to teach and demonstrate about resiliency factors and social problem-solving, as well as provide necessary support to adolescents. This will not only enhance protective factors in adolescents but also help detect the vulnerable adolescents who can be assisted with additional care and prevent them from developing mental health problems. The emphasis of roles of teacher is important because schools remain the universal settings for children and adolescents where they spend lot of time, where their emotional and behavioral needs are increased and can be significantly influenced. Thus, significant influences can be made towards improving their feeling of togetherness, friendship, trust with friends and teachers, sense of security, and reshaping their negative behaviors which will ultimately enhance their mental well-being. The results of the study also contribute to nursing research whereby information can be used as baseline data for future nurse researchers to explore other protective factors that are vital for protection and promotion of adolescents' mental health.

Our study was not free of limitations. Since data were collected from adolescents of a semi-rural school in the East of Bhutan, the findings are limited in generalizability. We recommend studies with a wider geographical area. Predictive studies to establish the casual relationship and a longitudinal study to keep track of changes in adolescent's mental health state and the roles of protective factors on mental health over time are also recommended.

In conclusion, the study examined the relationship between protective factors and mental health of middle and

late adolescents in Mongar District, Eastern Bhutan. Adolescents' mental health was at a moderate level. Among the protective factors, social support, social problem-solving, and resilience were positively correlated with mental health whereas religiosity was not. The study findings confer the importance of enhancing the factors that promote mental health in adolescents and prevent disorders. Understanding these factors will help mental health professionals and nurses in particular to provide knowledge, skills and resources necessary to promote mental health among these adolescents.

Acknowledgements

The authors would like to express gratitude to the Faculty of Nursing, Burapha University, Thailand, Ministry of Health and Ministry of Education, Thimphu, and Yadi Higher Secondary School, Mongar Bhutan, for their kind assistance. We hold a great gratitude for Bhutanese students who cordially participated in this study.

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Editorial note
Manuscript received in original form on February 5, 2016;
accepted in final form on March 24, 2016